



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,796	04/25/2005	Hideki Tanaka	28951.2195	6683

27890 7590 10/03/2006

STEPTOE & JOHNSON LLP
1330 CONNECTICUT AVENUE, N.W.
WASHINGTON, DC 20036

EXAMINER

THOMAS, JAISON P

ART UNIT	PAPER NUMBER
----------	--------------

1751

DATE MAILED: 10/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/532,796

Applicant(s)

TANAKA ET AL.

Examiner

Jaison P. Thomas

Art Unit

1751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/05:11/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1,4 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Thielen et al. (US Patent 6852790).

Thielen et al. teaches a polymer composition which are used in automotive applications that comprise at least one polymer and one carbon black where in the carbon black particle has a DBPA value from 20 to 450 cc/100 g and a CDBP value from 20 to 400 cc/100 g (which examiner construes as having particles which meet the claimed ratio limitations of Claim 1 depending on which particles are selected) as well as surface areas of 15 to 250 m²/g and a particle size from 14 to 250 nm (Abstract). Thielen teaches the composition as being used in automotive applications where "electrostatic discharge protection and electrostatic dissipative properties are important" and includes an example of switches (Column 8, lines 31-35). The materials are compounded together as illustrated in the examples (Column 10, lines 11-15).

With respect to the PTC characteristic of the claimed composition, the examiner respectfully submits that the prior art meets the claimed limitation. Specifically, Thielen

Art Unit: 1751

teaches a similar composition made in a similar manner and would inherently possess the PTC characteristic.

With respect to the absorption ratios that measured in Claim 5, the examiner respectfully submits that the prior art meets the claimed limitation. Specifically, Thielen teaches a similar composition wherein the values of the carbon blacks are actually disclosed, thus implying that the values were actually measured at some point.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3,6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chu et al. (US Patent 5580493).

Chu teaches a conductive polymer composition containing particulate conductive filler dispersed in a polymeric component wherein the polymer is comprised of polyethylene and alkyl acrylate polymer. The composition is used to make circuit protection devices (Abstract). The conductive filler used includes carbon black (Column 4, line 26) and examples of the compositions made are disclosed in Table I. Chu teaches that each example is made from mixing the composition in a Brabender mixer heated to 175 deg C for 15 minutes at a rate of 60 rpm (Column 6, lines 50-53) which

examiner notes is similar to the methods used by applicant to formulate the claimed compositions (see pg. 13, example (3)). Figure 1 shows an embodiment of the invention encapsulated between two foil electrodes in Figure 1 and a method is briefly described (see also Column 6, lines 42-44).

Chu is relied upon as disclosed above, however, Chu does not teach 1) a carbon black compound wherein the ratio of DBP to C-DBP absorption is greater than 1.0 but not greater than 1.1 and 2) a circuit protection device in which a plurality of electrodes are disposed between alternating layers of the polymer composition.

With respect to 1), it would have been obvious to one of ordinary skill in the art at the time the invention was made to understand that the composition made in Chu et al. would exhibit similar absorption ratios to those in the claimed compositions as both the prior art composition and the claimed composition are produced in a similar manner.

With respect to 2), it would have been obvious to one of ordinary skill in the art at the time the invention was made to select a design for a circuit using alternating electrodes and the polymeric composition as an obvious design choice (see Batliwalla et al. US Patent 4777351).

5. Claims 1,4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thielen et al. (US Patent 6852790).

Thielen is relied upon as discussed above, however, Thielen does not disclose the specific absorption ratios or methods required by Claim 1,4 and 5.

Art Unit: 1751

It would have been obvious to one of ordinary skill in the art at the time the invention was made to select carbon black materials from those disclosed in Chu et al. to meet the claimed limitations and further to disclose a method of dispersing such carbon black into a polymeric composition or to measure the claimed ratio while dispersing the carbon black material into the polymer.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaison P. Thomas whose telephone number is (571) 272-8917. The examiner can normally be reached on Mon-Fri 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on (571) 272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Mark Kopec
Primary Examiner

Art Unit: 1751

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jaison Thomas
Examiner
9/19/2006

JT


Mark Kopec
Primary Examiner